THE CLAIMS

What is claimed is:

1. A method for improving the format efficiency of a hard disk of a hard disk drive , the hard disk drive having a rotary actuator and a read/write head, the read/write head having a read element that is offset from a write element, the method comprising:

determining a radial position of the read/write head with respect to the hard disk;

writing a data track having a length between successive servo sample areas that is based on an arc of the rotary actuator, the radial position of the read/write head with respect to the hard disk and the offset between the read element and the write element.

2. The method according to claim 1, further comprising determining the length of the data track from a look-up table.

3. The method according to claim 1, further comprising determining the length of the data track based on a determination of the arc of the rotary actuator, the determined position of the read/write head with respect to the hard disk, and the physical offset between the read element and write element.

4. The method according to claim 1, further comprising determining the length of the data track based on an angular position of the rotary actuator.

5. A disk drive, comprising:

a rotary actuator;

a read/write head having a read element that is offset from a write element; and

at least one hard disk drive, the hard disk drive having at least one data track having a length between successive servo sample areas that is based on an arc of the rotary actuator, the radial

position of the read/write head with respect to the hard disk and the offset between the read element and the write element.

6. The hard disk drive according to claim 5, wherein the length of each data track is determined from a look-up table.

7. The hard disk drive according to claim 5, wherein the length of the data track is based on a determination of the arc of the rotary actuator, the determined position of the read/write head with respect to the hard disk, and the physical offset between the read element and write element.

8. The hard disk drive according to claim 5, wherein the length of the data track is based on an angular position of the rotary actuator.